

## VARIABLE INDUCTOR

## ABSTRACT OF THE DISCLOSURE

A variable inductor which avoids electrical breakdown of the insulation in the control windings when used in high power applications includes a core formed of a permeable magnetic material, the core having three legs, including a center leg and two outer legs. A main winding element comprising a main conductor is wound around the center leg of the core. A control winding element comprising a control conductor is wound in a figure-eight configuration having a first winding and a second winding around respective outer legs, the winding configuration canceling induced voltages in the first and second windings, wherein a current through the control winding element causes a change in inductance of the main winding element.